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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,363	02/25/2002	John P Gillham	124-921	1514

7590 12/28/2004  
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EXAMINER

POLYZOS, FAYE S

ART UNIT PAPER NUMBER

2878

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/069,363

Applicant(s)

GILLHAM ET AL.

Examiner

Faye Polyzos

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 11-13 is/are rejected.
- 7) ☒ Claim(s) 4-10 and 14-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/02 and 8/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### ***Claim Objections***

1. Claims 4-10 and 14-20 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 4-10 and 14-20 have not been further treated on the merits.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by *Butler et al* (US 5,446,284 A).

Regarding claim 1, *Butler* discloses a bolometer including a micro-bridge structure suspended over a void (space) above a substrate (14) and comprising a support element (18) carrying on its underside a sensing material (silicon diode), comprising a passivation layer (16) and a thin metal layer (17), is exposed to the void (space) and connected to tracks (See Generally Fig. 3) on the substrate (14) (See Fig. 1 and col. 2, lines 15-28, lines 34-40 and col. 3, lines 52-54, 61-63).

Regarding claim 2, *Butler* discloses radiation is absorbed by the support element such that the absorption is detected by the sensing material (silicon diode) (See Fig. 3 and col. 3, lines 52-57).

Regarding claim 3, *Butler* discloses the thickness of the support element is tailored to be substantially  $\frac{1}{4} \lambda$  of the incident radiation within the material of the support element (col. 2, lines 27-33, lines 34-40).

3. Claims 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by *Shorrocks et al* (US 5,942,791 A).

Regarding claim 11, *Shorrocks* discloses a method of fabricating a bolometer including a micro-bridge structure onto a substrate having the steps of: providing a sacrificial material on a surface region of the substrate (col. 4, lines 8-9), patternwise etching the sacrificial material (col. 4, lines 34-44), providing a sensing material on a surface region of the sacrificial material (52) (col. 5, lines 21-22), providing a support material (22) on a surface region of the sensing material (See Generally Fig. 2 and col. 3, lines 49-56), and removing the sacrificial material (11) leaving support material with the sensing material on its lower surface, substantially free standing above the substrate (See Generally Fig. 6 and col. 4, lines 31-40).

Regarding claim 12, *Shorrocks* discloses the sacrificial material is polyimide (See Generally Abstract and col. 4, line 31).

Regarding claim 13, *Shorrocks* discloses the support material has a thickness of approximately  $\frac{1}{4} \lambda$  where  $\lambda$  is the wavelength of the incident radiation of interest within the support material (col. 4, line 66 and col. 5, lines 1-3, 21-31).

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Faye Polyzos whose telephone number is 571-272-2447. The examiner can normally be reached on Monday thru Friday from 7:30 AM to 4:00 PM..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FP



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